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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/688,837	10/17/2000	Shusuke Yamamoto	001358	1853

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EXAMINER	
FERGUSON, MICHAEL P	
ART UNIT	**PAPER NUMBER**
3679	

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/688,837	YAMAMOTO ET AL.	
	Examiner	Art Unit	
	Michael P. Ferguson	3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6 and 11-20* is/are pending in the application.

4a) Of the above claim(s) *11-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 October 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 6 is objected to because of the following informalities:

Claim 6 (line 15) recites "spring is provided between a washer at a chalking side". It should recite --spring provided between a washer at a caulking side--.

For the purpose of examining the application, it is assumed that appropriate correction has been made.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US 5,520,269) in view of Uramoto et al. (US 4,642,011).

As to claim 6, Yamamoto et al. disclose a pin connection structure for use in a floating type brake disc assembly having:

a hub **2**;

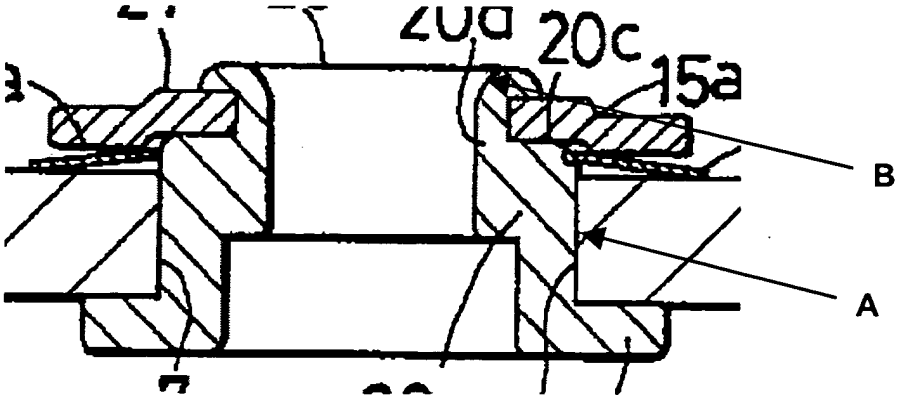
an annular disc **1** which is concentrically disposed around the hub with a clearance therebetween;

the hub and the disc having plural sets of semicircular connecting dents **6**, **7** opening toward the clearance to thereby form respective inserting holes; and

a hollow pin **20** having a shaft portion **20a** which does not have a step on an outer surface of an intermediate portion **A** (intermediate portion **A** has a constant diameter **A**; Figure 8(b) reprinted with annotations below) inserted into each of the inserting holes with a washer **21** fitted on an end portion **20d** of the hollow pin which is caulked radially outward for fixing the washer in position, an inner diameter portion of the end portion being only slightly expanded by caulking the hollow pin, and wherein the expansion does not exceed an outer diameter **A** of a shank **20a** of the pin, wherein an outer peripheral surface (outer cylindrical surface) of the hollow pin is not beveled but has an angular (cylindrical) shape,

a spring **15** provided between a washer **21** at a caulking side of the hollow pin and a washer **18** at a hub/disc side of the hollow pin,

wherein the hollow pin is formed (**subsequent to caulking**) into a rounded or arced convex shape in the end portion of the pin in a part of its inner periphery to the extent that the end portion has no sharply bent edge (rounded edge **B**) on which the caulking pressure is applied (Figures 8(a)-9).



Applicant is reminded that **process limitations are given no patentable weight in product claims**. See MPEP § 2113. "The patentability of a product does not

depend on its method of production. " In re Thorpe, 777 F.2d 695,698,USPQ 964,966 (Fed.Cir.1985).

Yamamoto et al. fail to disclose a pin connection structure wherein the hollow pin is made of a metal having a surface-treated layer, wherein the metal is an aluminum alloy or a ferrous metal, wherein the surface-treated layer is an oxide corrosion-resistant film and one of chromium plating and nickel plating.

Uramoto et al. teach a fastener made of a metal having a surface-treated layer, wherein the metal is an aluminum alloy or a ferrous metal, wherein the surface-treated layer is an oxide corrosion-resistant film and one of chromium plating and nickel plating, for preventing rust and corrosion of the fastener (column 1 line 62- column 2 line 23, column 5 lines 25- 61; column 6 lines 54- 68; and Table 7). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify a pin connection as disclosed by Yamamoto et al. to have a hollow pin made of a metal having a surface-treated layer as taught by Uramoto et al. to prevent rusting and corrosion of the hollow pin.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. in view of Uramoto et al. and Hufnagl et al. (US 4,331,041).

As to claim 6, Yamamoto et al. disclose a pin connection structure for use in a floating type brake disc assembly having:

a hub **2**;

an annular disc **1** which is concentrically disposed around the hub with a clearance therebetween;

the hub and the disc having plural sets of semicircular connecting dents **6**, **7** opening toward the clearance to thereby form respective inserting holes; and

a hollow pin **20** having a shaft portion **20a** which does not have a step on an outer surface of an intermediate portion **A** (intermediate portion **A** has a constant diameter **A**) inserted into each of the inserting holes with a washer **21** fitted on an end portion **20d** of the hollow pin which is caulked radially outward for fixing the washer in position, an inner diameter portion of the end portion being only slightly expanded by caulking the hollow pin, and wherein the expansion does not exceed an outer diameter **A** of a shank **20a** of the pin, wherein an outer peripheral surface (outer cylindrical surface) of the hollow pin is not beveled but has an angular (cylindrical) shape,

a spring **15** provided between a washer **21** at a caulking side of the hollow pin and a washer **18** at a hub/disc side of the hollow pin (Figures 8(a)-9).

Applicant is reminded that **process limitations are given no patentable weight in product claims**. See MPEP § 2113. "The patentability of a product does not depend on its method of production. " In re Thorpe, 777 F.2d 695,698,USPQ 964,966 (Fed.Cir.1985).

Yamamoto et al. fail to disclose a pin connection structure wherein a hollow pin is made of a metal having a surface-treated layer, and wherein the hollow pin is formed in advance into a rounded or arced convex shape in the end portion of the pin in a part of its inner periphery to the extent that the end portion has no sharply bent edge on which the caulking pressure is applied, wherein the metal is an aluminum alloy or a ferrous

metal, wherein the surface-treated layer is an oxide corrosion-resistant film and one of chromium plating and nickel plating.

Uramoto et al. teach a fastener made of a metal having a surface-treated layer, wherein the metal is an aluminum alloy or a ferrous metal, wherein the surface-treated layer is an oxide corrosion-resistant film and one of chromium plating and nickel plating, for preventing rust and corrosion of the fastener (column 1 line 62- column 2 line 23, column 5 lines 25- 61; column 6 lines 54- 68; and Table 7).

Hufnagl et al. teach a (partially) hollow pin **10** formed in advance into a rounded or arced convex shape **20** in an end portion of the pin in a part of its inner periphery to the extent that the end portion has no sharply bent edge on which caulking pressure is applied; the convex shape providing for firmly joining two members without the main shank **14** of the pin expanding during the riveting process, such expansion causing structural failure in the joined members (Figure 1, column 1 lines 33-35, 48-64). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify a pin connection as disclosed by Yamamoto et al. to have a hollow pin made of a metal having a surface-treated layer as taught by Uramoto et al. to prevent rusting and corrosion of the hollow pin; and to be formed in advance into a rounded or arced convex shape in an end portion of the pin in a part of its inner periphery as taught by Hufnagl et al. to provide for firmly joining the hub and disk without the main shank of the hollow pin expanding during the riveting process, such expansion causing deformation and possible structural failure of the hub and disk material, and cracking in the surface-treated layer.

Response to Arguments

5. Applicants' arguments filed December 28, 2004 have been fully considered but they are not persuasive.

As to claim 6, Attorney argues that:

Yamamoto et al. do not disclose a pin connection structure having *a hollow pin having a shaft portion which does not have a step on an outer surface of an intermediate portion, wherein an outer peripheral surface of the hollow pin is not beveled but has an angular shape; and a spring provided between a washer at a caulking side of the hollow pin and a washer at a hub/disc side of the hollow pin; wherein the end portion of the pin has no sharply bent edge on which the caulking pressure is applied.*

Examiner disagrees. As to claim 6, Yamamoto et al. disclose a pin connection structure having a hollow pin **20** having a shaft portion **20a** which does not have a step on an outer surface of an intermediate portion **A** (intermediate portion **A** has a constant diameter **A**); wherein an outer peripheral surface (outer cylindrical surface) of the hollow pin is not beveled but has an angular (cylindrical) shape; and a spring **15** provided between a washer **21** at a caulking side of the hollow pin and a washer **18** at a hub/disc side of the hollow pin; wherein the end portion of the pin has no sharply bent edge (rounded edge **B**) on which the caulking pressure is applied (Figures 8(a)-9).

Applicant is reminded that **process limitations are given no patentable weight in product claims**. See MPEP § 2113. "The patentability of a product does not

depend on its method of production. " In re Thorpe, 777 F.2d 695,698,USPQ 964,966 (Fed.Cir.1985).

Conclusion

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. The following patents show the state of the art with respect to methods for forming hollow pins:

Taylor (US 2,612,073), Newsom (US 2,767,877) and Brewer et al. (US 5,551,816) are cited for pertaining to methods comprising the step of forming a hollow pin in advance into a rounded or arced convex shape in the end portion of the pin.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Ferguson whose telephone number is (703)308-8591. The examiner can normally be reached on M-F (7:30-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (703)308-2686. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MPF
03/04/05

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